



Which statement best compares potential and kinetic energy?

- A) Objects always have more potential energy than kinetic energy.**
- B) Kinetic energy increases and potential energy decreases when the velocity of an object increases.**
- C) Only potential energy decreases when an object's height increases.**
- D) Objects always have more kinetic energy than potential energy.**

Solution

Correct answer: B) Kinetic energy increases and potential energy decreases when the velocity of an object increases.

Explanation:

Kinetic energy is the energy an object possesses due to its motion. Potential energy is the energy an object possesses due to its position or state. When an object moves and its velocity increases, the kinetic energy of the object increases, while the potential energy decreases. This is because the energy that was stored in the object's position or state has now been converted into motion. The sum of the potential and kinetic energy of an object is conserved, which means that as one energy increases, the other decreases.